Default Value

$5.00

B81. Switch installation multiplier

Definition

Definition: The telephone company investment in switch engineering and installation activities, expressed as a multiplier of the switch investment.

Default Value

1.10

B82. End Office Switching Investment Constant Term

Definition

The value of the constant appearing in the function that calculates the per line switching investment as a function of switch line size for an amalgam of host – remote and stand alone switches, expressed separately for BOCs and large independents and for small independents.

Default Values

BOC and Large ICO	Small ICO
$242.73	$416.11

B83. End Office Switching Investment Slope Term

Definition

The value of the term multiplying the log function appearing in the function that calculates the per line switching investment as a function of switch line size for an amalgam of host – remote and stand alone switches. This term is the same for BOCs, large independents, and small independents.

Default Value

-14.922

B84. Processor feature loading multiplier

Definition

The amount by which the load on a processor exceeds the load associated with ordinary telephone calls, due to the presence of vertical features, Centrex, etc., expressed as a multiplier of nominal load.

Default Value

The default value is 1.20 for business line percentage up to the variable business penetration rate, increasing linearly above that rate to a final value of 2.00 for 100% business lines.

B85. Business Penetration Ratio

Definition

The percentage of business lines to total line at which the processor feature loading multiplier is assumed to reach the "heavy business" value of 2.

Default Value

0.30

B86. Lot size, multiplier of switch room size

Definition

The multiplier of switch room size to arrive at total lot size, assuming that land area is needed to accommodate building plus parking requirements.

Default Value

2

B87. Tandem/EO wire center common factor

Definition

The percentage of tandem switches that are also end office switches or are collocated in wire centers with end office switches. This accounts for the fact that tandems and end offices are often located together, and is employed to avoid double counting of land and other wire center investment in these instances.

Default Value

0.4

B88. Power investment

Definition

The wire center investment required for rectifiers, battery strings, back-up generators and various distributing frames, as a function of switch line size.

Default Value

Lines	Investment Required
0	$5,000
1000	$10,000
5000	$20,000
25,000	$50,000
50,000	$250,000

B89. Switch room size

Definition

The area in square feet required to house a switch and its related equipment.

Default Value

Switch Room Size	
Lines	Sq. Feet of Floor Space Required
0	500
1,000	1,000
5,000	2,000
25,000	5,000
50,000	10,000

B90. Construction costs, per sq. ft.

Definition

The costs of construction of a wire center building.

Default Value

Construction Costs per sq. ft.	
Lines	Cost/sq. ft.
0	$75
1,000	$85
5,000	$100
25,000	$125
50,000	$150

B91. Land price, per sq. ft.

Definition

The land price associated with a wire center.

Default Value

Lines	Price/sq. ft.
0	$5.00
1,000	$7.50
5,000	$10.00
25,000	$15.00
50,000	$20.00

B92. Local Call Attempts

Definition

The number of yearly local call attempts, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B93. Call Completion Fraction

Definition

The percentage of calls that result in a message. By this definition, calls that result in a busy signal, no answer, or network blockage are all considered incomplete.

Default Value

0.7

B94. IntraLATA Calls Completed

Definition

The number of yearly intraLATA call attempts, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B95. InterLATA Intrastate Calls Completed

Definition

The number of yearly interLATA intrastate call attempts, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B96. InterLATA Interstate Calls Completed

Definition

The number of yearly interLATA interstate call attempts, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B97. Local DEMs, thousands

Definition

The number of yearly local DEMs, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B98. Intrastate DEMs, thousands

Definition

The number of yearly intrastate DEMs, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B99. Interstate DEMs, thousands

Definition

The number of yearly interstate DEMs, as reported by the FCC.

Default Value

Taken from ARMIS reports for the LEC being studied.

B100. Local bus/res DEMs ratio

Definition

The ratio of local Business DEMs per line to local Residential DEMs per line.

Default Value

1.1

B101. Intrastate bus/res DEMs

Definition

The ratio of intrastate Business DEMs per line to intrastate Residential DEMs per line.

Default Value

2

B102. Interstate bus/res DEMs

Definition

The ratio of interstate Business DEMs per line to interstate Residential DEMs per line.

Default Value

3

B103. Busy hour fraction of daily usage

Definition

The percentage of daily usage that occurs during the busy hour.

Default Value

0.10

B104. Annual to daily usage reduction factor

Definition

The effective number of business days in a year, used to concentrate annual usage into a fewer number of days as a step in determining busy hour usage.

Default Value

270

B105. Holding time multipliers, residential/business

Definition

The potential modification to the average call "holding time" (i.e., duration) to reflect Internet use or other causes, expressed as a multiplier of the holding time associated with ordinary residential or business telephone calls.

Default Value

Residential	Business
1.0	1.0

B106. Call attempts, Busy Hour (BHCA), residential/business

Definition

The number of call attempts originated per residential and business subscriber during the busy hour.

Default Value

[illegible]	
[illegible]	[illegible]
1.3	3.5

B107. Transmission Terminal Investment

Definition

The investment in the fully-equipped add-drop multiplexers (ADM) that extract/insert signals into OC-48 fiber rings, and are needed in each wire center to connect to the interoffice fiber ring or point to point circuit. The investment in the fully-equipped OC-3/DS-1 ADM/terminal multiplexers required to interface to the OC-48 ADM and to provide point to point circuits between on-ring wire centers and end offices not connected directly to a fiber ring. The amount by which the investment in OC-3s is reduced for each unit of 7 DS-1s below full capacity of the OC-3

Default Value

[illegible]			
[illegible]		[illegible]	[illegible]
48 DS-3s	12 DS-3s	[illegible]	[illegible]
$50,000	$40,000	$26,000	$500

B108. Number of fibers

Definition

The assumed fiber cross-section, or number of fibers in a cable, in the interoffice fiber ring and point to point network.

Default Value

24

B109. Pigtail Investment

Definition

The cost of the short fiber connectors that attach the interoffice ring fibers to the wire center transmission equipment via a patch panel.

Default Value

$60.00 per pigtail

B110. Optical Distribution Panel

Definition

The cost of the physical fiber patch panel used to connect 24 fibers to the transmission equipment.

Default Value

$1,000.00

B111. EF&I, per hour

Definition

The per-hour cost for the "engineered, furnished, and installed" activities for equipment in each wire center associated with the interoffice fiber ring, such as the "pigtails" and patch panels to which the transmission equipment is connected.

Default Value

$55.00

B112. EF&I, units

Definition

The number of hours required to install the equipment associated with the interoffice transmission system (see EF&I, per hour, above).

Default Value

32 hours

B113. Regenerator investment, installed

Definition

The installed cost of an OC-48 optical regenerator.

Default Value

$15,000

B114. Regenerator spacing, mi.

Definition

The distance between digital signal regenerators in the interoffice fiber optics transmission system.

Default Value

40 miles

B115. Channel Bank Investment, per 24 lines

Definition

The investment in DS-0 to DS-1 multiplexers in wire centers required for some special access circuits.

Default Value

$5,000

B116. Fraction of SA Lines Requiring Multiplexing

Definition

The percentage of special access circuits that require DS-0 to DS-1 multiplexing in the wire center in order to be carried on the interoffice transmission system. This parameter is utilized in conjunction with a study of the cost of special access circuits.

Default Value

0.0

B117. Digital Cross Connect System, Installed, per DS-3

Definition

The investment required for a digital cross connect system that interfaces DS-1 signals between switches and OC-3 multiplexers, expressed on a per DS-3 basis (672 DS-0).

Default Value

$30,000

B118. Transmission Terminal Fill (DS-0 level)

Definition

The fraction of maximum DS-0 circuit capacity that can actually be utilized in ADMs and DS-1 to OC-3 multiplexers.

Default Value

0.90

B119. Interoffice Fiber Cable investment per foot, installed

Definition

The installed cost per foot of interoffice fiber cable, assuming a 24-fiber cable.

Default Value

$3.50 installed and buried

B120. Number of Strands per ADM

Definition

The number of interoffice fiber strands connected to the ADM in each wire center. Typically, at least four are required around the ring.

Default Value

4

B121. Interoffice Structure Percentages

Definition

The relative amounts of different structure types supporting interoffice transmission facilities. Aerial cable is attached to telephone poles or buildings, buried cable is laid directly in the earth, and underground cable runs through underground conduit. Aerial and buried percentages are entered by the user; the underground fraction is then computed.

Default Values

Aerial	Buried	Underground
20%	60%	20%

B122. Transport Placement

Definition

The cost of placement of fiber cable used in the interoffice transmission system.

Default Values

Buried	Conduit
$1.77	$16.40

B123. Buried Sheath Addition

Definition

The cost of dual sheathing for additional mechanical protection of fiber interoffice transport cable.

Default Value

$0.20/foot

B124. Interoffice conduit, cost and number of tubes

Definition

The cost per foot for interoffice fiber cable conduit, and the number of spare tubes (conduit) placed per route.

Default Values

Cost per foot	Spare tubes per route
$0.60	1

B125. Pullbox Spacing

Definition

Spacing between pullboxes in the interoffice portion of the network.

Default Value

2,000 feet

B126. Pullbox Investment

Definition

Investment per fiber pullbox in the interoffice portion of the network.

Default Value

$500

B127. Pole Spacing, Interoffice

Definition

Spacing between poles supporting aerial interoffice fiber cable.

Default Value

150 feet

B128. Interoffice pole material and labor

Definition

The installed cost of a 40' Class 4 treated southern pine pole.

Default Value

Pole Investment	
Materials	$201
Labor	$216
Total	*$417*

B129. Fraction Interoffice Structure Common With Feeder

Definition

The percentage of structure supporting interoffice transport facilities that is also shared by feeder facilities, expressed as a fraction of the smaller of the investment in the three types of facilities (aerial, buried and underground are treated separately).

Default

0.75

B130. Fraction of interoffice structure assigned to telephone

Definition

The fraction of investment in interoffice poles and trenching that is assigned to LECs. The remainder is attributed to other utilities/carriers

Default Value

Fraction of interoffice structure assigned to telephone		
[illegible]	[illegible]	Underground
0.33	0.33	0.33

B131. Operator traffic fraction

Definition

Fraction of traffic that requires operator assistance. This assistance can be automated or manual (see Operator Intervention Fraction in the Operator Systems section below)

Default

0.02

B132. Total interoffice traffic fraction

Definition

The fraction of all calls that are completed on a switch other than the originating switch, as opposed to calls completed within a single switch.

Default

0.65

B133. Maximum trunk occupancy, CCS

Definition

The maximum utilization of a trunk during the busy hour.

Default

27.5

B134. Trunk port investment, per end

Definition

Per trunk equivalent investment in switch trunk port at each end of a trunk.

Default

$100

B135. Direct-routed fraction of local inter-office

Definition

The amount of local interoffice traffic that is directly routed between originating and terminating end offices as opposed to being routed via a tandem switch.

Default

0.98

B136. Tandem routed fraction of total intraLATA traffic

Definition

Fraction intraLATA calls that are routed through a tandem.

Default

0.2

B137. Tandem routed fraction of total interLATA traffic

Definition

Fraction of interLATA (IXC access) calls that are routed through a tandem instead of directly to the IXC.

Default

0.2

B138. POPs per Tandem Location

Definition

The number of IXC points of presence requiring an entrance facility, per LEC tandem.

Default

5

B139. Threshold value for off-ring wire centers

Definition

Wire center line limit for determining whether wire center should be included in ring calculations. Wire centers falling below this limit will be connected directly to the nearest ring, but will not appear on the ring itself. Transmission equipment consists of terminal multiplexers and not ADMs.

Default

5,000 lines

B140. Remote - host fraction of interoffice traffic

Definition

Fraction of local direct traffic assumed to flow from a remote to its host switch.

Default

0.10

B141. Host - remote fraction of interoffice traffic

Definition

Fraction of local direct traffic assumed to flow from a host to its remotes.

Default

0.05

B142. Maximum nodes per ring

Definition

Maximum number of ADMs that can form a ring.

Default

16

B143. Real time limit, BHCA

Definition

The maximum number of BHCA a tandem switch can process.

Default

750,000

B144. Port limit, trunks

Definition

The maximum number of trunks that can be terminated on a tandem switch.

Default

100,000

B145. Tandem common equipment investment

Definition

The amount of investment in tandem switch common equipment, which is the hardware and software that is present in the tandem in addition to the trunk terminations themselves. The cost of a tandem is estimated by the HM as the cost of common equipment plus an investment per trunk terminated on the tandem.

Default

$1,000,000

B146. Maximum trunk fill (port occupancy)

Definition

The fraction of the maximum number of trunk ports on a tandem switch that can be utilized.

Default

0.90

B147. Maximum real time tandem occupancy

Definition

The fraction of the total capacity (expresses as the real time limit, BHCA) a tandem switch is allowed to carry.

Default

0.90

B148. Tandem common equipment intercept factor

Definition

The multiplier of the common equipment investment input that gives the common equipment cost for the smallest tandem switch.

Default

0.50

B149. Entrance Facility Distance from Serving Wire Center & IXC POP

Definition

Average length of trunks connecting an IXC with the wire center that serves it.

Default

0.5 miles

B150. STP link capacity

Definition

The maximum number of signaling links that can be terminated on a given STP pair.

Default Value

720

B151. STP maximum fill

Definition

The fraction of maximum links, as stated by the STP link capacity input, that the model assumes can be utilized before it adds another STP pair.

Default Value

0.80

B152. STP maximum investment, per pair

Definition

The cost to purchase and install an STP pair, fully equipped for the maximum number of links.

Default Value

Maximum investment: $5,000,000

B153. STP minimum common equipment investment, per pair

Definition

The minimum investment for a minimum-capacity STP, i.e.: the fixed investment for an STP pair that serves a minimum number of links.

Default Value

$1,000,000

B154. Link termination, both ends

Definition

The investment required for the transmission equipment that terminates both ends of an SS7 signaling link.

Default Value

$900.00

B155. Signaling link bit rate

Definition

The rate at which bits are transmitted over an SS7 signaling link.

Default Value

56,000 bits per second

B156. Link occupancy

Definition

The fraction of the maximum bit rate that can be sustained on an SS7 signaling link.

Default Value

0.40

B157. C link cross-section

Definition

The number of C-links in each segment connecting a mated STP pair.

Default Value

24

B158. ISUP messages per interoffice BHCA

Definition

The number of Integrated Services Digital Network User Part (ISUP) messages associated with each interoffice telephone call attempt, i.e. the messages switches send to each other over the SS7 network to negotiate establishing a voice path.

Default Value

6

B159. ISUP message length, bytes

Definition

The average number of bytes in each ISUP (ISDN User Part) message.

Default Value

25 bytes

B160. TCAP messages per transaction

Definition

The number of Transaction Capabilities Application Part (TCAP) messages required per SCP database query. A TCAP message is a message from a switch to a database or another switch that provides the switch with additional information prior to setting up a call or completing a call.

Default Value

2

B161. TCAP message length, bytes

Definition

The average length of a TCAP message.

Default Value

100 bytes

B162. Fraction of BHCA requiring TCAP

Definition

The percentage of BHCAs that require a database query, and thus generate TCAP messages.

Default Value

0.10

B163. SCP investment per transaction per second

Definition

The investment in the Service Control Point (SCP) associated with database queries, or transactions, stated as the investment required per transaction per second. For example, an SCP required to handle 100 transactions per second would require a 2 million dollar investment, if the default of $20,000 is assumed.

Default Value

$20,000

B164. Investment per operator position

Definition

The investment per computer required for each operator position.

Default Value

$6,400

B165. Maximum utilization per position, CCS

Definition

The estimated maximum number of CCS that one operator position can handle during the busy hour.

Default Value

32

B166. Operator intervention factor

Definition

The percentage of all operator-assisted calls that require operator intervention, expressed as 1 out of every N calls, where N is the value of the input.

Default Value

10

B167. Public Telephone equipment investment per station

Definition

The weighted average cost of a public telephone and pedestal (coin/non-coin and indoor/outdoor).

Default Value

$760

B168. ICO STP Investment per Line

Definition

The surrogate value for the per line investment in a signal transfer point by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$5.50

B169. Per Line ICO Local Tandem Investment

Definition

The surrogate value for the per line investment in a local tandem switch by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$1.90

B170. Per Line ICO OS Tandem Investment

Definition

The surrogate value for the per line investment in an Operator Services tandem switch by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$0.80

B171. Per Line ICO SCP Investment

Definition

The surrogate value for the per line investment in a SCP by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$2.50

B172. Per Line ICO STP/SCP Wire Center Investment

Definition

The surrogate value for the per line investment in an STP/SCP wire center by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$0.40

B173. Per Line ICO Local Tandem Wire Center Investment

Definition

The surrogate value for the per line investment in a local tandem wire center by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$2.50

B174. Per Line ICO OS Tandem Wire Center Investment

Definition

The surrogate value for the per line investment in a operator services tandem wire center by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$1.00

B175. Per Line ICO C-Link / Tandem A-Link Investment

Definition

The surrogate value for the per line investment in a C-link / tandem A-link by an independent telephone company (ICO), in lieu of calculating it directly in the model.

Default Value

$0.30

B176. Host – remote CLLI assignments

Definition

Input form allowing user to define which end office switches are hosts and which are remotes and to assign remotes to specific hosts.

Default Value

Default settings do not define hosts or remotes.

B177. Host – remote assignment enable

Definition

Allows user to specify whether host-remote identification and assignment are to be made.

Default Value

Default setting is disabled.

B178. Cost of capital

Definition

The capital cost structure, including the debt/equity ratio, cost of debt, and return on equity, that make up the overall cost of capital.

Default Values

Debt percent	0.450
Cost of debt	0.077
Cost of equity	0.119
Weighted average cost of capital	*0.1001*

B179. Depreciation Lives and Net Salvage Percentages

Definition

The economic life of various network plant categories.

Default Value

motor vehicles	8.24	11.21
garage work equipment	12.22	-10.71
other work equipment	13.04	3.21
buildings	46.93	1.87
furniture	15.92	6.88
office support equipment	10.78	6.91
company comm. Equipment	7.40	3.76
general purpose computers	6.12	3.73
digital electronic switching	16.17	2.97
operator systems	9.41	-0.82
digital circuit equipment	10.24	-1.69
public telephone term. Equipment	7.60	7.97
Poles	30.25	-89.98
aerial cable, metallic	20.61	-23.03
aerial cable, non metallic	26.14	-17.53
underground cable, metallic	25.00	-18.26
underground cable, non metallic	26.45	-14.58
buried cable, metallic	21.57	-8.39
buried cable, non metallic	25.91	-8.58
intrabuilding cable, metallic	18.18	-15.74
intrabuilding cable, non metallic	26.11	-10.52
conduit systems	56.19	-10.34

B180. Structure Percentage Assigned to Telephone Company

Definition

The fraction of investment in distribution and feeder poles and trenching that is assigned to LECs. The remainder is attributed to other utilities/carriers.

Default Values

Density Zone	Aerial	Buried	Underground	Aerial	Buried	Underground
0-5	.50	.33	1.00	.50	.40	.50
5-100	.33	.33	.50	.33	.40	.50
100-200	.25	.33	.50	.25	.40	.40
200-650	.25	.33	.50	.25	.40	.33
650-850	.25	.33	.40	.25	.40	.33
850-2,550	.25	.33	.33	.25	.40	.33
2,550-5,000	.25	.33	.33	.25	.40	.33
5,000-10,000	.25	.33	.33	.25	.40	.33
10,000+	.25	.33	.33	.25	.40	.33

B181. Income tax rate

Definition

The combined federal and state income tax rate on earnings paid by a telephone company.

Default Value

39.25%

B182. Variable overhead factor

Definition

The variable component of corporate overhead costs, expressed as a fraction of the sum of all capital costs and operations expenses calculated by the model.

Default Value

10.4%

B183. Other taxes factor

Definition

Taxes paid by a telephone company in addition to federal and state income taxes.

Default Value

5%

B184. Billing/bill inquiry per line per month

Definition

The cost of bill generation and billing inquiries for end users, expressed as an amount per line per month.

Default Value

$1.22

B185. Directory listing per line per month

Definition

The monthly cost of creating and maintaining white pages listings on a per line, per month basis that is to be eligible for universal service support.

Default Value

$0.00

B186. Forward-looking network operations factor

Definition

The forward-looking factor applied to a specific category of expenses reported in ARMIS called Network Operations. The factor is expressed as the percentage of current ARMIS-reported Network Operations.

Default Value

50%

B187. Alternative Central office switching expense factor

Definition

The expense to investment ratio for digital switching equipment, used as an alternative to the ARMIS expense ratio, reflecting forward looking rather than embedded costs. Thus, this factor multiplies the calculated investment in digital switching in order to determine the monthly expense associated with digital switching. This value does not include software upgrades to the switch.

Default Value

2.69%

B188. Alternative circuit equipment factor

Definition

The expense to investment ratio for all circuit equipment (as categorized by LECs in their ARMIS reports), used as an alternative to the ARMIS expense ratio to reflect forward looking rather than embedded costs.

Default Value

0.0153

B189. End office non line-port cost fraction

Definition

The fraction of the total investment in digital switching that is assumed to be due to traffic-sensitive elements and is thus usage-sensitive. This value shows how much of the cost of an end office is associated with the line port as opposed to usage.

Default Value

70%

B190. Per-line monthly LNP cost

Definition

The estimated cost of permanent Local Number Portability (LNP), expressed on a per-line, per-month basis, including the costs of implementing and maintaining the service. This is included in the USF calculations only, not the UNE rates, because it will be included in the definition of universal service once the service is implemented.

Default Value

$0.25

B191. Carrier-carrier customer service per line

Definition

The yearly amount of customer operations expense associated with the provision of unbundled network elements by the LECs to carriers who purchase those elements.

Default Value

$1.69

B192. NID expense per line per year

Definition

The estimated annual NID expense on a per line basis, based on an analysis of ARMIS data modified to reflect forward looking costs. This is for the NID only, not the drop wire, which is included in the ARMIS cable and wire account.

Default Value

$1.00/line/year

B193. DS-0/DS-1 Terminal Factor

Definition

The relative terminal investment per DS-0, between the DS-1 and DS-0 levels.

Default Value

12.4

B194. DS-1/DS-3 Terminal Factor

Definition

The relative investment per DS-0, between the DS-3 and DS-1 levels.